

Djara – Cave Art in Egypt's Western Desert

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Cave art, or rock art in caves, constitutes something special in the Western Desert of Egypt, where most depictions are found in rock shelters. Such enclosed spaces provide further possibilities for the analysis of the rock art, apart from the description of panels and figures. The placement, the choice of the bedrock and the space itself are also of interest and influenced the prehistoric artist just as well as the cultural background.

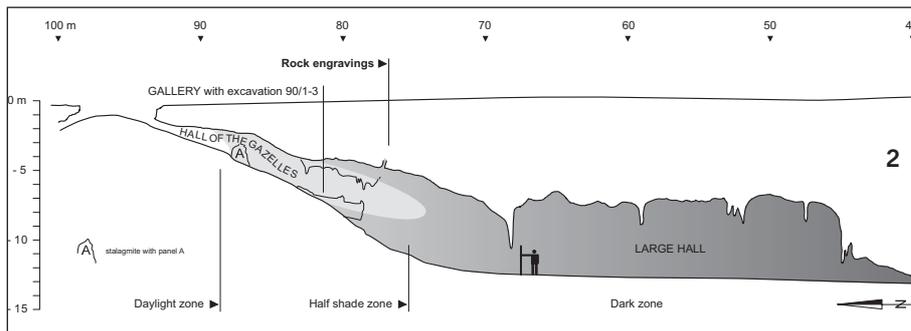
The dripstone cave of Djara, situated on the Egyptian Limestone Plateau halfway between Asyut in the Nile Valley and the Farafra Oasis, with its rich incised rock art repertoire, affords a good basis for such an analysis. In this article, the results of the rock art documentation, done by the Cologne based ACACIA-project¹, are being published for the first time in their entirety². Until now, only little was known about the rock art of the northern part of Egypt's Western Desert, so Djara can contribute another brick to our understanding of the area.

Introduction

In Africa, contrary to Europe and Asia, rock art in caves is a rarity. The majority of African rock art sites are not in caves, but rather in rock shelters (abris). These are shallow and thus flooded with daylight all the way to the

1. ACACIA (Arid Climate, Adaptation and Cultural Innovation in Africa) was a Collaborative Research Centre at the University of Cologne from 1995 to 2007, which was funded by the German Research Foundation (Deutsche Forschungsgemeinschaft). The archaeological work was carried out by the subproject A1 dealing with "Climatic Change and Human Settlement between the Nile Valley and the Central Sahara".

2. More illustrations and photographs of the Djara cave and its rock art will be published soon (KINDERMANN, K., *Djara. Zur mittelholozänen Besiedlungsgeschichte zwischen Niltal und Oasen (Abu-Muharik Plateau, Ägypten)*, Africa Praehistorica, Köln).



The Djara cave

The actual entrance to the dripstone cave is just a narrow opening in the level limestone ground (fig. 2), lying in a characteristic shallow basin. Here, the ceiling collapsed and gave access to the cave. Behind the entrance, a long sand slope leads to a kind of terrace with a large stalagmite (panel A) densely covered with engravings (fig. 8) and later on to a large cavern hall, with marvellous stalactites (fig. 3).

Altogether, the cave system can be grouped into three different spaces (Claßen *et al.* 2001; Pastoors 2003). The uppermost cave level (*ca.* 4-5m under the surface) is directly behind the entrance. This *ca.* 11 x 7m large and around 3m high space is called the “hall of the gazelles”. It forms the throughway to a second level *ca.* 7-8m below the surface. This room, the “gallery of the engravings” (fig. 4), reaches west of the sand ramp along the west wall of the cave and ends in the south at a gallery, whose south-western part is collapsed. If one leaves the hall of the gazelles, on past the gallery and over the sand ramp towards the south the “large hall” is reached, which has a present level of 12-13m under the surface. The large hall has an almost quadratic area with an edge of *ca.* 30m and a height of 5-6m. The level ground in the large cavern hall consists of 2 to 6m thick sand deposits over the solid rock, as verified by ground penetrating radar profiles. Granulometric examinations of drilling samples³ clearly show that the sediments in the cave consist of sand only. The lower parts show signs of aeolian sorting which was presumably deposited during periods with more arid conditions. The upper zone, where the sand deposits are up to 2.5m thick, was formed during more humid conditions. Whether this is an indication for a fundamental climatic change, and if so when it exactly took place, is still uncertain. OSL-analysis of the lower layer yielded a pre-Holocene age (pers. comm. O. Bubenzer 2002); during the period of prehistoric settlement nearly no sedimentation occurred. The rock art of Djara is not covered by sinter anywhere, which indicates that the karst processes were no longer active during that time.



Fig. 2
Schematic cross-section through the dripstone cave of Djara.

Fig. 3
“Large hall” of the dripstone cave of Djara (view against northwest).

Fig. 4
“Gallery of the engravings” during the documentation of panel H (view against south).

Engraved and pecked rock art

The surveys and documentation of the rock art of Djara in 1999 and 2000 led, especially in the darker cave areas, to numerous new discoveries, so that today a total of 133 figures are known. The rock art was created through engraving, pecking or through a combination of both techniques. They are distributed on nine

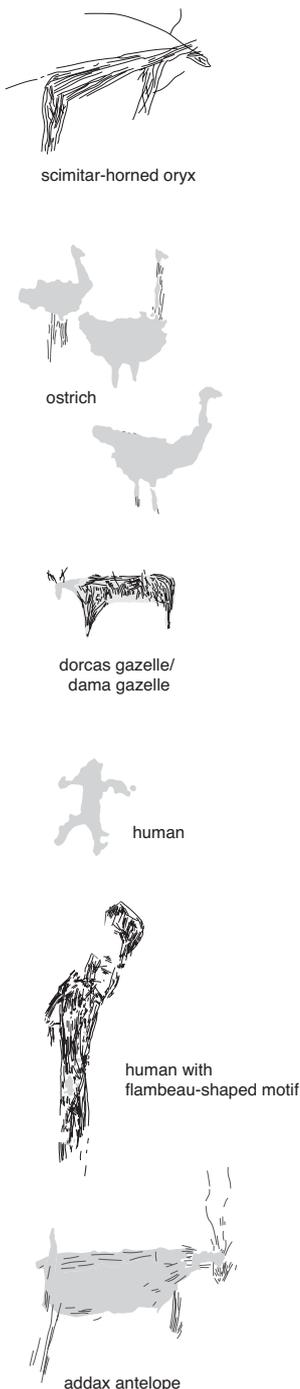
3. Ground penetrating radar by Horst Rüter and Martin Albrecht of the “Deutsches Montan-technologisches Institut für angewandte Geophysik Bochum (DMT)” and drillings by Thomas von der Way.

Fig. 5
Map of the dripstone cave Djara, marked are the panels with rock art.



Fig. 6

Most frequent motifs depicted in the Djara rock art (pecked surfaces are grey shaded, engravings are illustrated by thin black lines and areal scratching are light grey shaded).



panels (panels A to I) at different locations in the cave (fig. 5). Almost 80% of the figures are in the hall of the gazelles and 19% in the gallery of the engravings. There are hardly any figures in the large hall (tab. 1).

The dominant motifs in Djara are animal figures with over 85%. However, the definite assignment of each figure to a specific animal is often difficult, since their depiction is frequently very abstract. In the Egyptian Western Desert, the engraved and pecked rock art often shows very little detail and is quite abstract, although certain animals such as birds, giraffes, camels, but also humans, are easy to identify due to clear characteristics. According to Dirk Huyge, the fact that the figures have sparse details and abstract depictions is the reason that up to now there has been rather little scientific interest in the figures. "The main reason for this neglect is undoubtedly the fact that several other African rock art traditions surpass their Egyptian counterparts from the aesthetic point of view. In this respect, Egyptian rock art has always been considered inferior to the neighbouring central Saharan rock paintings and engravings." (Huyge 2003: 59).

Thus, in Djara the attributes were analysed to obtain clarity on the depicted animal figures (fig. 6). The shape and form of the horns depicted turned out to be especially significant, as also the length of the horns. In the end, the single attributes of the horns were combined into the three combinations spiral/long, straight/long or convex/long and straight/short horns. A comparison of these horn shapes with wild animals that live or lived in comparable climatic conditions in the Egyptian Western Desert, revealed that the spiral/long horn depictions correspond to the addax antelope (*Addax nasomaculatus*), the straight/long or convex/long horns to the scimitar-horned oryx (*Oryx gazella dammah*) and the straight/short horns to the dorcas or dama gazelles (*Gazella dorcas*, *Gazella dama*). It could not be clarified which animal the depictions of the cloven-hoofed animals without horns represented.

It was much easier to identify the ostrich, which – as also the cloven-hoofed animals – is shown as a side view. Human figures appear as isolated line draw-

ings either as complete “en face”-views or with outstretched arms with another figure that starts at the end of the arms. Another figure seems to depict a torch as an elongated, upside-down triangle with an upper part that bends to the left – as seen by the viewer – and ends in a roof-like top (fig. 7). Its relevance is unknown, since similar figures are not known yet in the Sahara. Such figures will be called “flambeau-shaped motifs” in the text.

In addition, there are zigzag lines, grid patterns, vertical line bundles and erratic lines, which, except for the zigzag lines, were all engraved.

Among the 133 figures in Djara, besides indeterminate cloven-hoofed animals (23.3%), scimitar-horned oryx (19.5%), addax (15.8%) and ostrich (16.5%) dominate. Then there are gazelles (6.8%) and human figures (6.0%). The flambeau-shaped motifs account for 3.8%. Zigzag lines (2.3%), grid patterns, vertical line bundles and erratic lines (each 1.5%) are found the least.

A preference in how the figures are oriented can also be recognised; 62.8% are drawn with an orientation to the right, as seen by the viewer. Only 20.8% of the animal figures have a leftward orientation. Upward (12.3%) or downward (4.7%) orientations were much rarer. The absolute measurements of the animal figures – measured without the extremities – were between 10cm and 20cm. The largest figures are the two zigzag lines with a length of *ca.* 50cm, whereas an ostrich figure with a torso length of 3.3cm was the smallest one.



Fig. 7

Photo of a human figure with flambeau-shaped motif.

Characterisation of the panels

The majority of the rock art in Djara is concentrated in the hall of the gazelles, which has a stalagmite (panel A) towering in the middle (*cf.* Kuper 1996; Claßen *et al.* 2001; Pastoors 2003). Almost 65% of all the rock art in Djara are on this stalagmite. The panels B, C and figure D-I are in the same hall.

Three panels (E, H and I) are in the gallery of the engravings, which branches off southwest of the hall of the gazelles to the north. Panel E can be found directly at the fork and it only has four drawings. A few meters farther into the gallery is panel I, which is close to the floor and also has four drawings. The last panel in the gallery of the engravings is panel H, which after panels A and C, has the third largest concentration of rock art, 13% of all figures in Djara.

The large hall has – in spite of its size and thus large area potential – no rock art, except for erratic lines on panels F and G.

The following descriptions of the individual panels are set up according to a uniform pattern. First off, a general description is given that serves as an orientation, in which details of the panel's measurements and further subdivisions into individual compositions are explained. Then, the rock art is described within these small units. At first the focus is on distribution of the rock art, then the motifs are covered and at the end, the particularities of the respective compositions are described.

Panel A

In the centre of the hall of the gazelles, there is a stalagmite with a circumference of *ca.* 4m and a height of *ca.* 1.5m that has rock art on all sides. Due to its oval shape, the surface is divided naturally into two compositions A-I (oriented NE) and A-II (oriented SW). Via a deep step, the stalagmite tapers upwards towards composition A-I. In comparison to A-I, A-II is mostly planar and only has a rough surface in the central area due to a sinter coating.

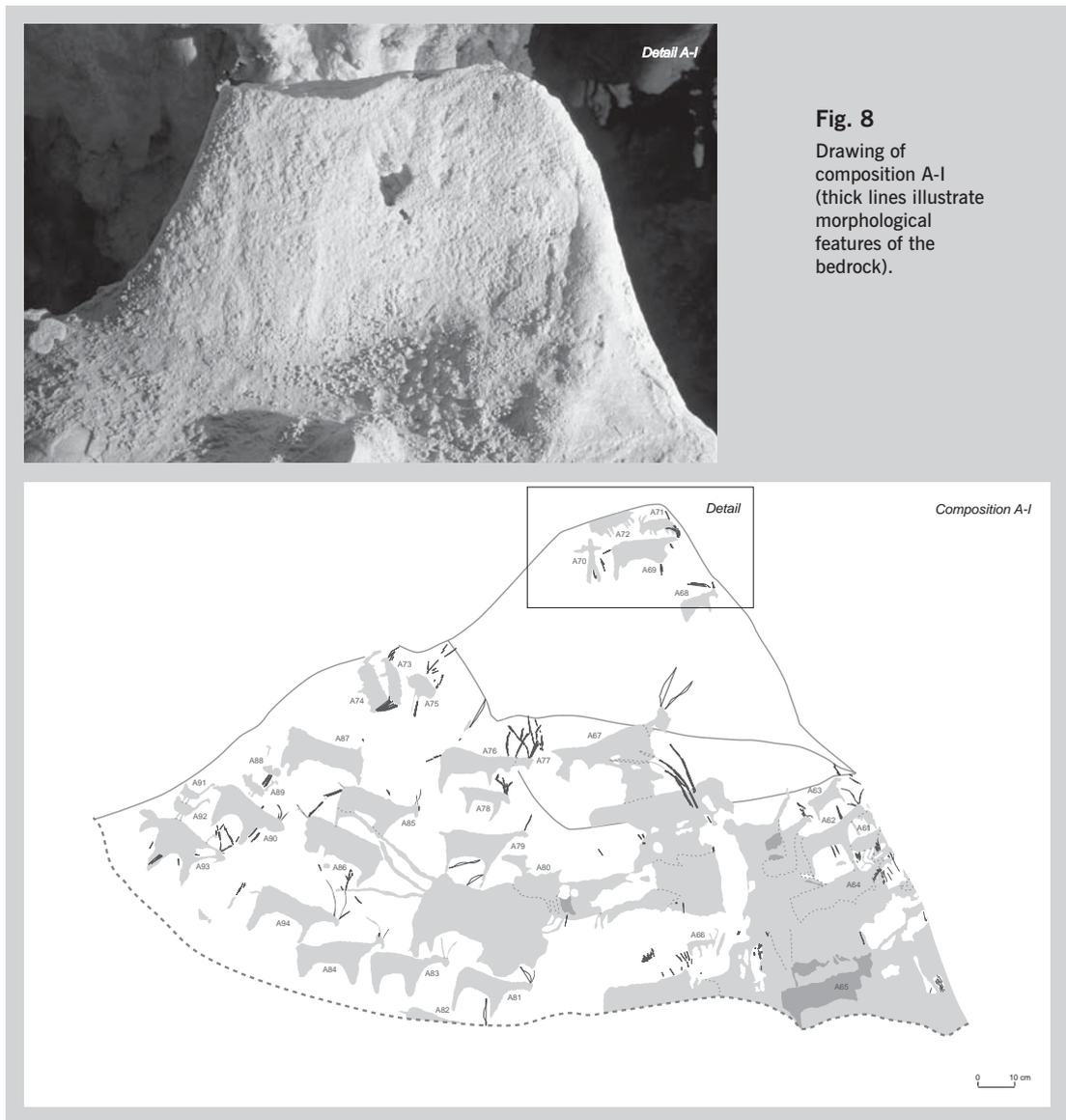


Fig. 8
Drawing of composition A-I (thick lines illustrate morphological features of the bedrock).

• **Composition A-I (fig. 8)** : Up to the step in the upper part of the rock, the stalagmite is completely covered with rock art and individual drawings overlap to such a degree that it is very hard to identify some of them. Above the step, there is a free space, approximately 30cm in height. On the other side of it, there are more figures on the tip of the stalagmite. Central figures are not recognisable. There are twelve scimitar-horned oryxes, six addaxes, two dorcas/dama gazelles and seven indeterminate cloven-hoofed animals. Only the ostrich, with five figures, shows a clear concentration on the left side. In addition, there are two humans (A61 and A70) depicted. Almost all depictions display rests of previous engravings in addition to the facial pecking. In general, only the horns were only engraved, however, fine line rests can be found in the bodies and legs of the animal figures.

• **Composition A-II (fig. 9)**

The vertical division of composition A-II is most likely due to the rough surface of the central area. Nevertheless, the concentration of rock art on the left side is quite apparent and it is smoothly contiguous to the concentration of the composition A-I and together they form the NW-side of the stalagmite. The manifold overlapping figures in composition A-II are limited to the direct contact area to composition A-I. On the right side, there are four small groups of figures that can be seen. There is also no central figure in composition A-II.



Fig. 9
Drawing of
composition A-II.



Diverse cloven-hoofed animals (four scimitar-horned oryxes, eight addaxes, four dorcas/dama gazelles and one indeterminate cloven-hoofed animal) and 16 ostriches are evenly distributed across the entire composition. Human figures (A2, A13 and A21) and flambeau-shaped motif (A14, A20 and A25) are only found on the left side. There are several ostriches on the right side.

Although facial pecking is dominant here, there are several figures that are completely engraved, especially on the left side. Depictions such as A51, A30 and A31 clearly document the successiveness of engraving and pecking. That this is a conceptual procedure is documented by the absolutely identical distribution and the frequent combination of both design techniques.

Panel B (fig. 10)

At the edge of the hall of the gazelles, *ca.* 1m away from panel A, panel B can be found on a *ca.* 50cm high rock that juts out of the sand and has a sinter coating. Both rock

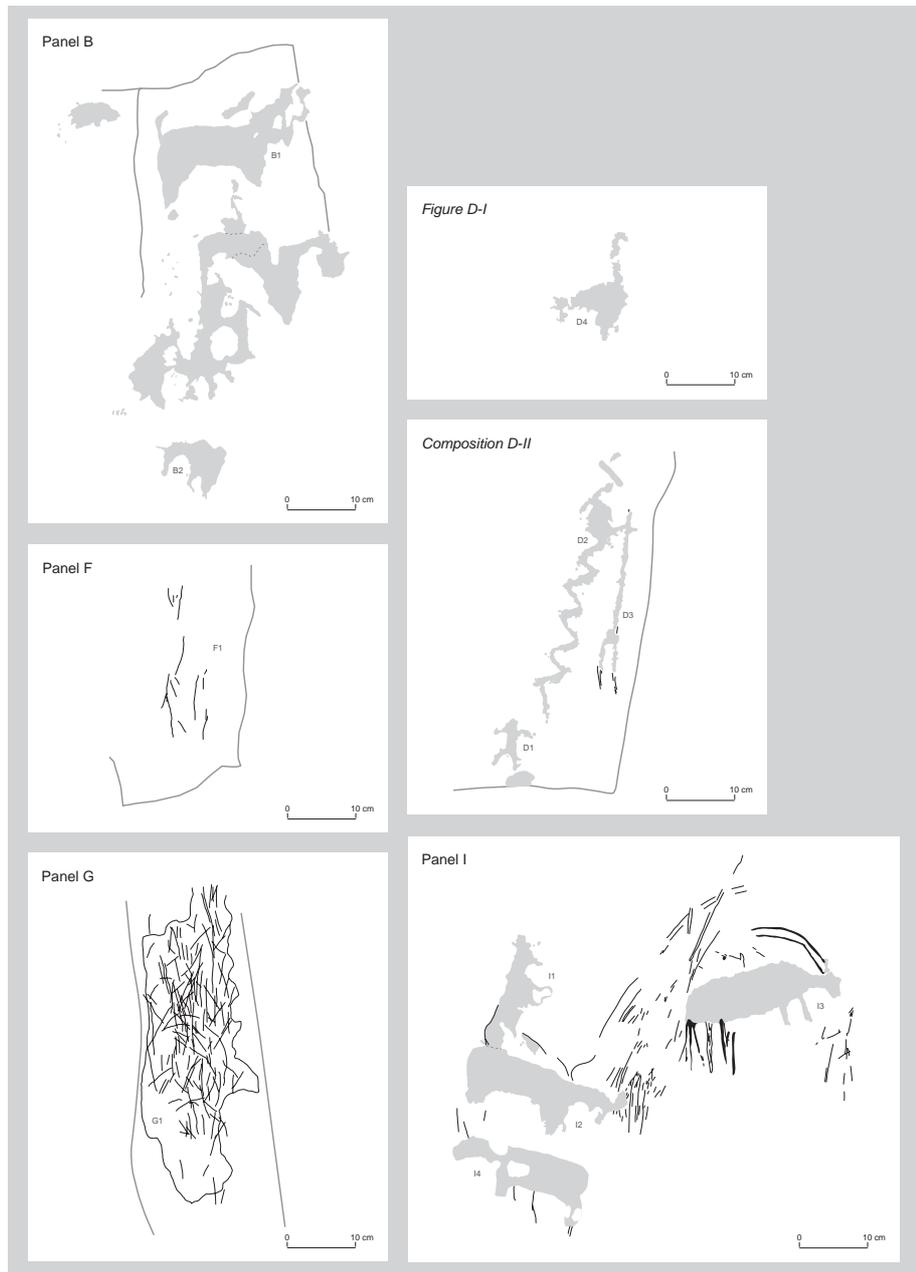


Fig. 10
Compilation of drawings of panels B, D, F, G and I.

art figures are placed towards the centre of the space. The figure B1, an addax, is on the tip of the rock and underneath there are erratic pecked lines and the figure B2, an indeterminate cloven-hoofed animal. All figures were pecked and show no traces of previous engravings.

Panel C (fig. 11)

Panel C spans a width of 3m in the hall of the gazelles and can be subdivided into three compositions C-I, C-II and C-III.

• **Composition C-I**

On the left side of this composition there is a completely engraved scimitar-horned oryx (C6). On the right side, three pecked figures (two indeterminate cloven-hoofed animals and an addax) are depicted, of which only the addax (C8) has engraved horns.

• **Composition C-II**

In the upper part of composition C-II, near the ceiling, there is a single depiction of an addax (C1). The area underneath is completely covered with a grid pattern (C4). This

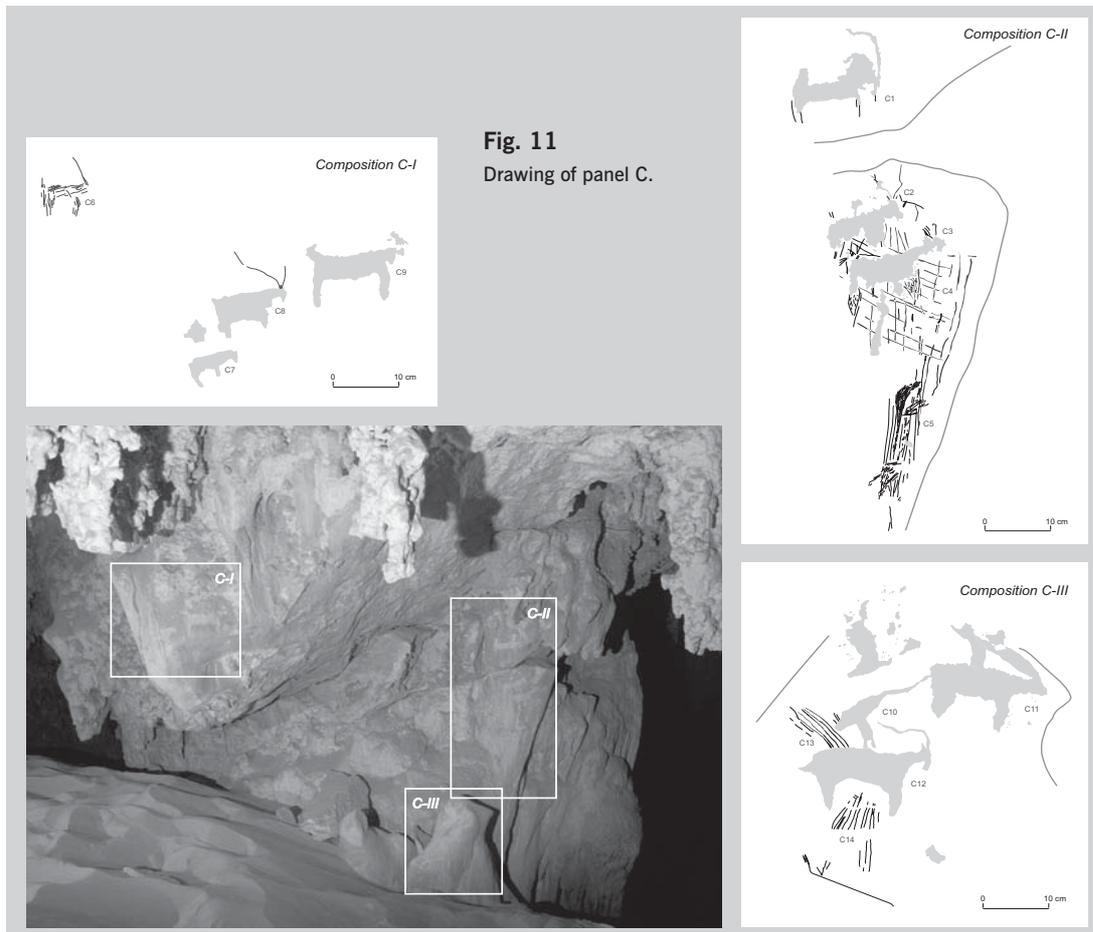


Fig. 11
Drawing of panel C.

motif is overlapped by an addax (C2), a dorcas/dama gazelle (C3) and a flambeau-shaped motif (C5), all of which are positioned in vertical succession. A connection between the grid pattern and the other figures is not recognisable. Whereas all of the animal depictions were done in combined technique (engraving and pecking), the flambeau-shaped motif is completely engraved. A central figure is not recognisable.

• *Composition C-III*

The side of the rock that faces the middle is completely covered with rock art. The figures are uniformly distributed; a central figure is not recognisable. Via one or two line bundles, without any recognisable connection, three figures were pecked: a scimitar-horned oryx (C11), an addax (C12) and an indeterminate cloven-hoofed animal (C10).

Panel D (fig. 10)

Panel D can be found on both sides of a rock that hangs from the roof at the present entrance to the cave. Whereas figure D-I is oriented towards the hall of the gazelles, the rear part (D-II) is oriented towards the passage to the gallery of the engravings.

• *Figure D-I*

A pecked ostrich (D4) forms figure D-I, which is also the first figure that one sees from the entrance.

• *Composition D-II*

Composition D-II is made up by three figures. A human figure (D3) stretches its arm towards a zigzag line (D2). Both figures are connected to each other. At the foot of the zigzag line, there is another human figure (D1). Engraving rests can only be found at the large human figure (D3) at the end of the lower extremities. All other figures are completely pecked.

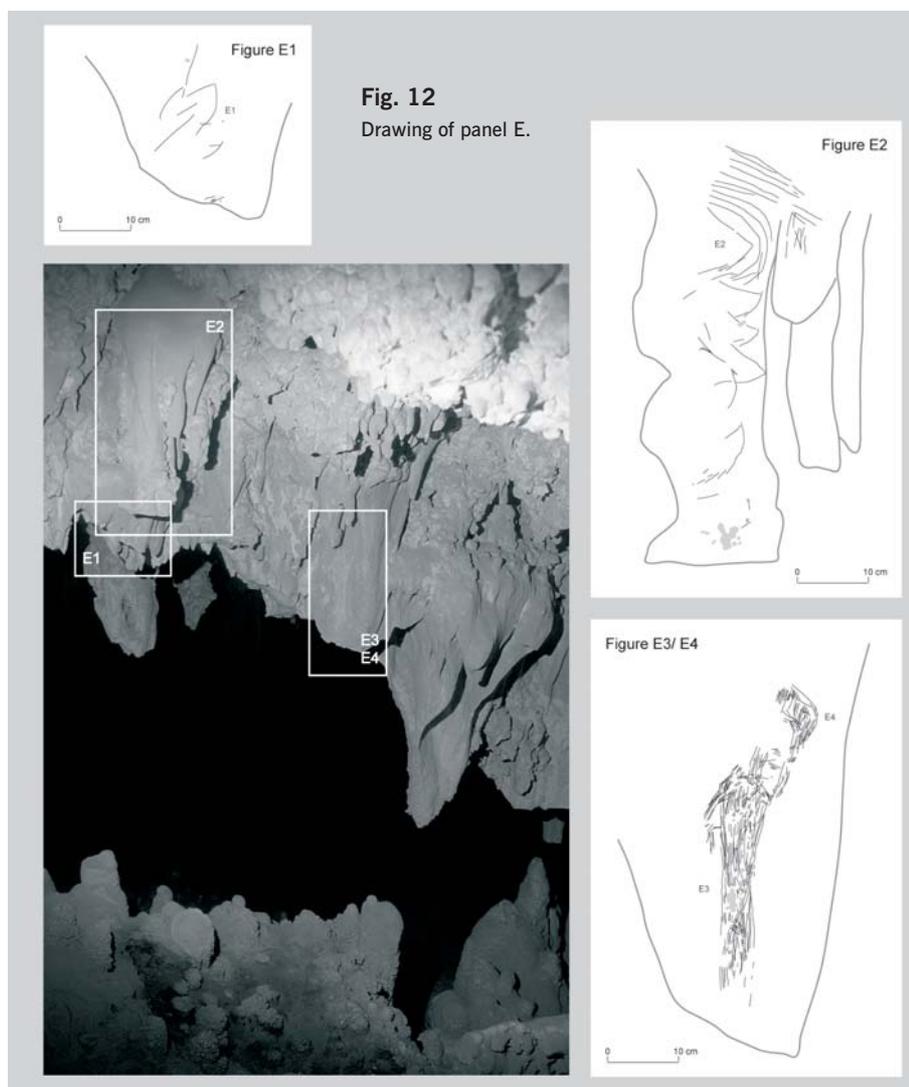


Fig. 12
Drawing of panel E.

Panel E (fig. 12)

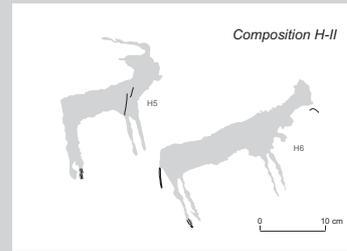
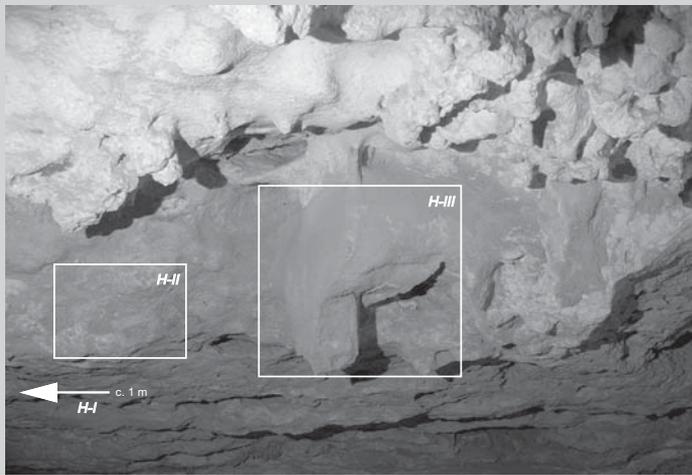
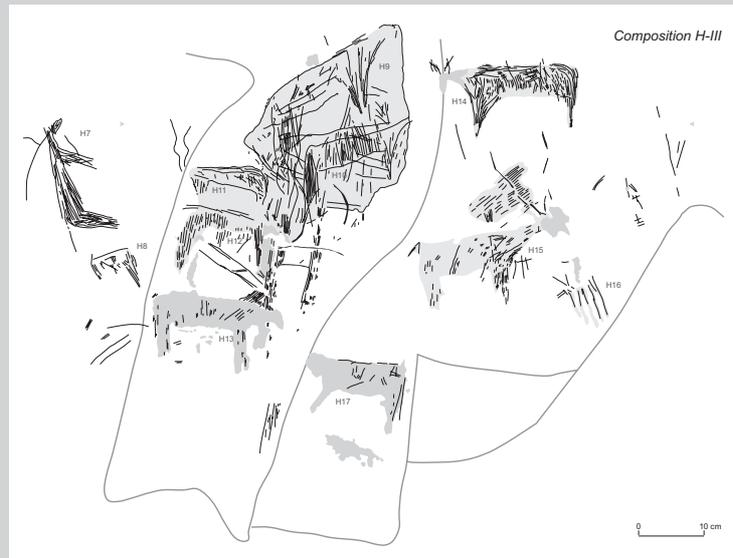
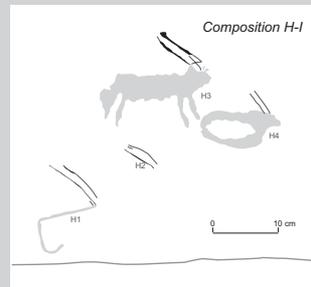
Three broken-off sinter curtains form the base for the rock art of panel E. Comparable traces can also be found in the neighbouring sinter curtains and stalactites. Judging by the degree of weathering of the fractures, this is not a case of modern vandalism.

Every one of the three engraved sinter curtains has an isolated motif. Both left sinter curtains have deeply engraved zigzag lines connected to other lines (E1 and E2). The right sinter curtain has a human figure, which has a flambeau-shaped motif upon its raised, outstretched arm. This configuration has similarities with two compositions on panel A (A13/14 and A20/21). However, the figure on panel E is much larger, with a height of over 30cm and in addition, it has a filled-in torso with extremities that stick out. One arm hangs down and is slightly bent. The hand is offset from the lower arm and fingers can be vaguely discerned. The other arm is raised and carries the flambeau-shaped motif. The legs and feet of the figure are missing. Due to the different arms (one raised, one bent) and the slightly bent upper body, the figure, which is exclusively engraved, portrays a certain dynamics. The size of these figures and their spatial position suggest that they were of central importance.

Panel F (fig. 10)

A broken-off sinter curtain also forms the base of this panel. In the middle, in vertical succession, there is a combination of unidentifiable 20cm long lines (F1).

Fig. 13
Drawing of panel H.



Panel G (fig. 10)

On a stalactite there is a composition of intensive and dense engravings (G1). As on the neighbouring panel F, these are made up exclusively of erratic lines and no figures can be recognised.

Panel H (fig. 13)

Panel H is made up of three compositions that are next to each other on sinter coated rock.

• *Composition H-I*

Composition H-I is made up of four scimitar-horned oryxes with deeply engraved horns (H1 - H4). Remarkable is that a small natural oval-shaped indentation is integrated into the figure H4 and takes up most of the area of the body.

• *Composition H-II*

Circa 1m next to the composition H-I, are both pecked figures H5 and H6 (a dorcac/dama gazelle and an indeterminate cloven-hoofed animal). The heads were pecked quite indistinctly. Engraving rests can be seen under the pecked bodies and extremities.

• *Composition H-III*

The final part of panel H (ca. 60cm next to composition H-II), i.e. of the gallery of the engravings, is formed by the composition H-III. Next to the panels A and C, this is the panel with the most figures. From the left to the right one can see a scimitar-

horned oryx (H7), an indeterminate cloven-hoofed animal (H8), two addaxes (H11 and H12), a scimitar-horned oryx (H13), two indeterminate cloven-hoofed animals (H9 and H10), a dorcas/dama gazelle (H14), a scimitar-horned oryx (H15), a vertical line bundle (H16) and an indeterminate cloven-hoofed animal (H17). The motifs are uniformly distributed in the composition and only an intensively engraved area in the centre is prominent. In the central area, next to the figures, there are numerous engraved lines, which are not assigned to any special motifs.

Engraving techniques were frequently used here. Only the two figures H13 and H17 were pecked. However, they show rests of previous engravings. Furthermore, the use of a natural relief can be observed in both figures H11 and H14, which have their heads placed exactly on the edge of the relief.

Panel I (fig. 10)

There are four figures on a rock on the floor of the cave near the wall in the gallery of the engravings (three indeterminate cloven-hoofed animals and a scimitar-horned oryx). The scimitar-horned oryx is on the right side of the panel and could only be clearly identified due to its deeply engraved horns (I3). Engraving rests can be found under all of the pecked figures. Furthermore, there are also engravings in the central area that are not visibly associated with the figures.

Composition of the panels

Due to its well-preserved condition and separate areas, the dripstone cave of Djara provides an excellent opportunity for conducting analyses on the positioning and origin of the panels. Thus, it appears that some of the pecked figures were superimposed upon the probably older, engraved figures, which would allow a detailed investigation of the origin process of the art.

Furthermore, the question arises as to the placement and combination of the motifs on the different panels (**tab. 1**). It is noticeable that every motif is on at least two panels. At the same time, no motif is found on all of the panels.

Panels that are thematically closely connected seem to be also spatially close together. For example, the erratic lines are only found on the panels F and G. The composition D-II and the panel E are very similar due to the occurrence of human motifs and zigzag lines. Also characteristic for the four panels mentioned before

Tab. 1
Relative distribution of the motifs on the panels (in percent), n = 133.

	A	B	C	D-I	D-II	E	F	G	H	I
human figure	3.76				1.50	0.75				
ostrich	15.79			0.75						
flambeau-shaped motif	2.27		0.75			0.75				
scimitar-horned oryx	12.03		1.50						5.26	0.75
addax antelope	10.53	0.75	3.01						1.50	
dorcas/dama gazelle	4.51		0.75						1.50	
grid pattern	0.75		0.75							
bundle of lines, vertical	0.75		1.50						0.75	
zigzag line					0.75	1.50				
erratic line							0.75	0.75		
indefinite animal	14.29	0.75	2.27						3.76	2.27
total	64.68	1.50	10.53	0.75	2.25	3.00	0.75	0.75	12.77	3.02

is the absence of gazelle and antelope depictions. Ostriches are only depicted in the hall of the gazelles, on panel A and figure D-I. Panel A is the only one that has depictions of gazelles and antelopes together with ostriches.

The observed spatial differentiation of the two groups gazelles/antelopes and ostriches is overcome to a certain extent by the flambeau-shaped motif, since it appears in both groups. This connection through a single, special motif is also an argument for the proximity in time of the figures, which is furthermore strengthened by the almost identical style and manner in which the rock art was executed.

Due to the manifold and large quantities of motifs, the described distribution pattern suggests that the hall of the gazelles with the panels A, B, C and the figure D-I can be taken as the central position for the activities connected to the rock art in Djara. Aside from this, the area around panel E and the composition D-II is a thematic centre. However, very few rock art depictions are found here, yet among them the largest, scenic depiction in Djara: a person carrying a flambeau-shaped motif (E3/E4).

The gallery of the engravings, with panels H and I, abuts on the hall of the gazelles and also picks up on the topic from there, gazelles and antelopes. Panels F and G, farther away in the large hall, are the only exception. Due to their differentness, perhaps they belong to another period of usage as the other rock art in Djara, which is also strengthened by the peculiarities of the erratic lines, which are found only here.

Placement of the rock art

Although eyesight is the most important sense used for orientation in a cave, all other senses also react to the special circumstances, *i.e.* the darkness and quietness, by developing hyper-receptivity. The spatial distribution of the rock art reflects not only the cultural background of the artist, it has to also accommodate the biological conditions (*e.g.* orientation, accessibility) and thus, also influence the placement of the rock art.

In order to structure a cave and its light conditions, François Rouzaud (1977; 1997) suggested various light zones. Accordingly, a cave is divided into a daylight zone, a half shade zone and a dark zone. Thus, the dripstone cave Djara has the following divisions (**fig. 2**):

The outside influence is strongest in the immediate vicinity of the cave entrance. Sunlight and daily temperature variations influence the daylight zone, which only reaches a few metres into the hall of the gazelles. Astonishingly, there is no rock art here.

In the bordering half shade zone, there is enough light for orientation and to execute the rock art. The temperature variations are much smaller and the constant cave climate can be felt. In Djara, the hall of the gazelles, the start of the gallery of the engravings and a small part of the large hall, in the north, are in this zone, in which more than 90% of the rock art is found.

In the dark zone, daylight can be hardly perceived at all and artificial light is necessary to be able to see. The daily change of outside climate no longer has any influence and the cave climate is constant. In Djara, these conditions are only found in the large hall with its short side passages. Only the panels F and G with their rock art are found here, which underscores their special status.

It is clear that in Djara, half shade areas in the cave were preferably selected and every potential space was used for rock art. Contrary to this, except for the panels F and G, no rock art is found in the daylight and dark zones.

Furthermore, in understanding the rock art in Djara, the selection of the bedrock used, the graphic preparation and the final execution techniques, as well as investigations on the relationship between the execution techniques and motifs are also of importance.

In Djara, the only rock art pecked into the limestone bedrock, which is quite crumbly, is an ostrich (D4) (fig. 10). From today's entrance, it is the first figure in the hall of the gazelles. All other figures were executed on surfaces that had coatings of calcite, which covers the surface of the limestone in numerous places in the dripstone cave. It can be assumed that this was chosen for the rest of the figures because of the better quality of the calcite as surface for the rock art. In Djara, the calcite usually has a plane surface and thus allows a relatively controlled execution of the drawings. Another reason could lie in the good visibility of the rock art, because the freshly incised or pecked calcite is a light yellowy white and can be distinctly seen against the surrounding surface. That good visibility was also important can be seen in the fact that all of the rock art in Djara are freely accessible and visibly placed.

There are only isolated cases where the natural relief is incorporated into the rock art. Evidence to verify this is found on panel H (fig. 13), where a scimitar-horned oryx (H4) was pecked around a small oval-shaped indentation. The concavity was used for the major part of the torso and thus conveys a negative volume. Both figures H11 and H14 were placed so that the heads of the figures lie exactly upon a spine of the rock formation, thus enhancing the "en face" perspective.

It appears that a better visibility was not only provided by incorporating natural surfaces into the rock art, but by also using diverse execution techniques. A total of six different techniques were documented: pecked outlines, completely pecked, pecked with engraved additions (e.g. the horns), engraved outlines, completely engraved and engraved with pecked additions. The dominant variants are the "pecked with engraved additions" (41.4%) and "completely pecked" (36.8%). Much rarer are "completely engraved" (10.5%) and "engraved outlines" (9%). Used very rarely were the variants "engraved with pecked additions" (1.5%) and "pecked outlines" (0.8%). The prehistoric artists' intentions seem to emphasise the better visibility of the pecked figures (almost 80%), rather than the primarily engraved figures (ca. 20%).

A few figures seem to suggest a temporal succession of engraving and pecking. This could be shown for 16 rock art figures (12%). This is exemplified by a detailed description of the figure A10 (fig. 14): The entire animal was completely engraved and then afterwards completely pecked. The first phase is evidenced by engravings on various parts of the torso. Traces of both techniques cover the exact same area, thus it can be presumed that the drawing of the figure was executed in two phases, perhaps in directly one after the other. This procedure was observed on 15 other rock art figures (A2, A11, A22, A30, A31, A38, A39, A45, A51, C1, D3, H5, H13, H17 and I1). Whether there was a pause between both phases cannot be definitely determined. A relationship between the two phase execution and the depicted motifs cannot be recognised.

Fig. 14
Photo of
technological
details of
figure A10.



Archaeological context in the cave

In addition to the rock art, human activity in the dripstone cave is evidenced by an up to 10cm thick layer of fine-grained ash and charcoal sediment that was excavated in the gallery of the engravings immediately underneath panel E (Kindermann 2006). The low roundness of the charcoal pieces indicates *in situ* fires. In the area, only a small inventory of a total of 36 stone artefacts

was excavated. They are not very specific and do not allow a chronological classification. Therefore, *in situ* stone artefact production can be ruled out. Due to the small number of artefacts found in combination with the large number of hearths that indicate a repeat usage, this site cannot be interpreted as a mundane settlement site, but rather served most likely as a site for more ritual purposes.

Notable is also the high number of bone fragments from small bovids/gazelles ($n = 271$; archaeozoological determinations by Hubert Berke and Nadja Pöhlath). The majority of the bone pieces are darkly stained due to charcoal or ash rests and some have scorch marks. Several parallel cut marks on the outer side of a scorched fragment of a long bone indicates that the animal was slaughtered. Directly under the flambeau-shaped motif (E3/E4), a cervical vertebra (atlas) of either an addax or a scimitar-horned oryx was found. In addition, a *Chambardia* shell that showed traces of having been subjected to heat was also found. Such mollusc shells are known from other excavations outside of the dripstone cave. They were probably used to carry hot embers and are frequently excavated in connection with hearths (Kindermann 2006).

The archaeobotanical determination adduced primarily *Acacia*, *Tamarix* and Capparaceae species (archaeobotanical determinations by Stefanie Nussbaum). Scorched rests of fruits from *Anastatica hierochuntica* have special relevance, since they indicate the influence of the winter rain regimes in this region during the mid-Holocene. For the same time period, Capparaceae are evidence for the advancement of the summer rain boundary to the north. It is possible that the Djara region was a kind of overlap area of both climate regions during the Holocene wet phase (Kindermann *et al.* 2006). However, the winter rain indicator has an important function as a settlement indicator, since settlement of the region can be expected due to the moderate winter temperatures (Kindermann & Bubenzer 2007).

Next to the excavated finds, in the immediate vicinity of the flambeau-shaped motif (E3/E4), a multiple burin was found in a cleft of a stalactite (fig. 15). In addition, a core was stuck between two stalagmites. The fact that both artefacts were found wedged extremely tightly indicates anthropogenic action and that accidental deposition is unlikely. In addition to a possible ritual relevance of the artefacts, purely pragmatic explanations are also possible; special objects that are placed in a particular spot can be found in the darkness of a cave much more easily.

The excavation finds from the dripstone cave adduced three 14C-dates (fig. 16), two of which originated from charcoal pieces that were excavated underneath

Fig. 15
Burin (quartzitic sandstone) from the niche in the ceiling above the gallery.

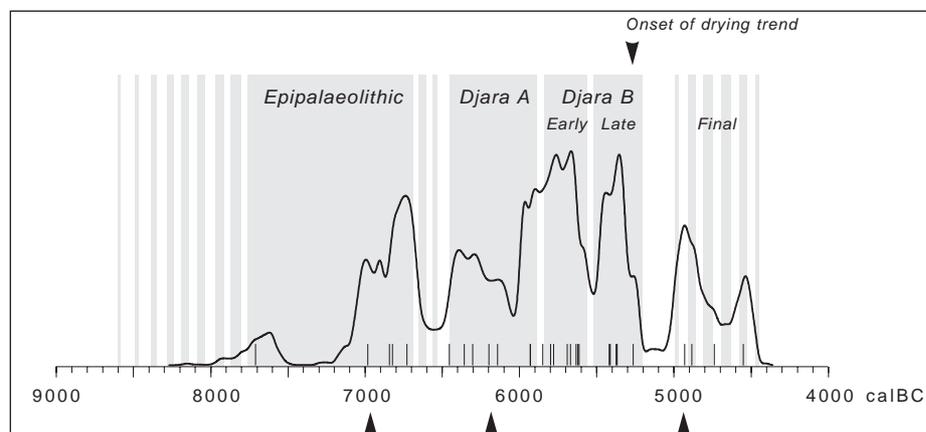
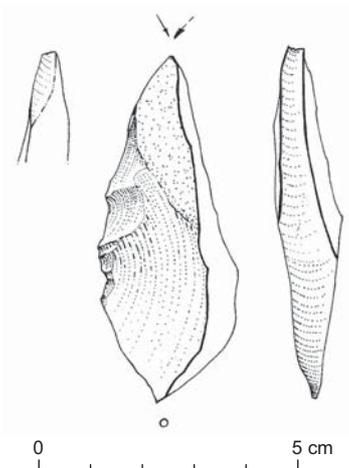


Fig. 16

14C-sequence of the Djara region. Ticks on the x-scale represent individual dates ($n = 29$). The three black arrows below mark the three 14C-dates from the excavation inside the dripstone cave. The cultural sequences, based on lithic artefacts and pottery, are marked in grey. Date series are calibrated and arranged by group calibration using CALPAL 2005 (www.calpal.de).

panel E. The samples had absolute ages of 6970 ± 130 calBC (KIA 12422: 8055 ± 60 BP) and 6180 ± 120 calBC (Erl-2863: 7303 ± 109 BP). The third date originates from a fragment of a domesticated sheep/goat tooth that was found in a charcoal layer and was dated to 4930 ± 50 calBC (KIA-34600: 6030 ± 35 BP). All three dates verify the concept, already conceived through archaeological excavations, of an unstratified charcoal layer, which indicates repeated fires over a longer period of time.

In conclusion, according to our present knowledge, the particular attractiveness of the gallery as a kind of main activity zone within the cave⁴, can be derived from several factors. First, the gallery is in the boundary area of the half shade zone, where simple manual activities and orientation is possible because of the natural daylight. Second, the gallery is a relatively flat area and thus well-suited for human habitat. In addition, it has an exposed position within the cave system, since only from this location is it possible to look into the entrance area with the hall of the gazelles and the gallery of the engravings as well as – after the eyes have become used to the dark – parts of the large hall.

Archaeological context around the cave

The vicinity around the cave was intensely surveyed in an approximately 20 km² large area during the years 1998 to 2002 (Kindermann 2006; Kindermann & Bubbenzer 2007). Typical for the environment of a Limestone Plateau, the predominant landforms are undulating to flat surfaces with shallow pans and basins (up to a depth of about 20 m) with rounded limestone hilltops and remnants of ancient lake deposits (so-called “playa sediments”). The latter were deposited during the Holocene humid phase, when this area obtained more precipitation than today (Bubbenzer & Hilgers 2003). However, for the most part, the environment on this plateau is predominantly stony desert (so-called “hamada”), where vegetation is normally sparse and today mostly contracted (Kindermann *et al.* 2006; Darius & Nussbaum 2007).

During these survey activities, altogether more than 240 prehistoric sites were documented. Although after the hyperarid Pleistocene, the settlement activity in the Djara area already began around 7,700 calBC, which is documented by a few early Holocene (Epipalaeolithic) sites (Gehlen *et al.* 2002: 88; Kindermann 2006), the greatest share of the sites can be dated to between 6,500 to 5,200 calBC and mirror a maximum occupation during the mid-Holocene. For Djara, this time period can be divided into two major occupation units, named Djara A (6,500-5,900 calBC) and Djara B (5,800-5,200 calBC) (**fig. 16**) (Gehlen *et al.* 2002: 88-90; Kindermann 2004: 39-46 & 2006). Radiocarbon dates and related archaeological sites decreased rapidly after *ca.* 5,200 calBC, indicating the depopulation of the desert as a result of the drying up of the Eastern Sahara. A final occupation unit, named Final Djara B, falls around 5,000-4,500 calBC, which may represent short-term revivals of precipitation. However the very small sites display only sporadic occupations, while larger campsites, which are characteristic for the former chronological units, do not exist.

Altogether, such a concentration of prehistoric sites points to locally favour-

4. It was not possible to carry out deep soundings in the sand ramp in the hall of the gazelles because the ramp there is an essential part of the static and shifting of the sand could cause the cave to collapse. Due to this, an archaeological artefact layer in this area cannot be excluded.

able conditions in Djara, which is in contrast to the surrounding high plain areas. Generally, an arid environment with short humid intermediate stages (Bubenzer & Hilgers 2003) and a maximum precipitation amount of 100mm per annum can be deduced for the Holocene humid phase (Neumann 1989a; 1989b; Kuper & Kröpelin 2006).

Conclusion

Similarities between the rock art of Djara and other North-East African rock art sites are hard to find in terms of style and theme. The isolated position of the Djara rock art in the centre of the Egyptian Limestone Plateau, where there are no other rock art depictions in the surrounding distance of about 250 km, makes any comparative approach highly challenging. In terms of techniques, Djara appears to be generally connected to the tradition of rock engravings of wild fauna (Winkler's style of the "Earliest Hunters"; 1938; 1939) that dominate most of the Western Desert, in particular the oases in the southern and western periphery of the Limestone Plateau. Even more challenging is the fact that engravings found in great number in the oases' regions at Kharga, Dakhla, and Farafra have yet not been dated with much certainty, though some previous assumptions point to a dating within the Holocene humid phase or slightly later. Despite the simple congruence in the techniques of incising and pecking, the only distinctive aspect to connect Djara with the engravings further south and west is the great number of typical larger desert or dry savannah animals that represented the real environment during the Holocene humid phase.

The only remarkable exception is the giraffe, which is most frequent as a motif at the sites of the oases and the desert further southwest, but is absent among the depictions in the cave of Djara. Giraffes are known as animals that live in the southern sub-Saharan savannahs, but often penetrate the deserts when they can feed on fresh plant leaves. However, it is not likely that giraffes spread further north as the oases bow due to diminishing summer rains, temperature, acacia vegetation and sandy desert landscapes. This might explain why no giraffes were depicted at Djara, implying that the rock art during that time mainly stressed to depict what virtually existed in the Western Desert large fauna.

The shortcoming of the results of the rock art study at Djara is the fact that no direct dating is given for the depictions. Some arguments, however, can be listed from the contextual evidence of the cave itself and the habitation sites in its vicinity, which help to establish a frame of reference for the chronological position:

(1) A time frame in absolute dates is given by the occupational history of the Djara area that is closely linked to the climatic development. Although the onset of humid conditions at the beginning of the early Holocene are not well substantiated at Djara, some Epipalaeolithic finds connected to 14C-dates around 7,000 calBC indicate human activities during the early Holocene. The bulk of open air sites and connected dates, however, fall into the mid-Holocene units Djara A and B, *ca.* 6,500-5,200 calBC. With the beginning of the drying trend at 5,200 calBC large habitation sites disappear. Only very sporadic and short-termed human activities are indicated during the Final Djara B unit, *ca.* 5,000-4,500 calBC, before progressing aridity finally stopped human subsistence on the Egyptian Limestone Plateau. The loss of the area to human existence by

5,200 calBC and finally at 4,500 calBC consequently creates the terminus *ante quem* for the application of the rock art inside the cave.

(2) Artefacts and 14C-dates from the cave itself where they have been found in close proximity to the rock depictions fit well into the picture derived from the seasonal camps outside the cave. Three 14C-dates from the ashy layer on the terrace at 7,000 calBC and 6,200 calBC and 4,900 calBC document activities during the late Epipalaeolithic, the end of unit Djara A and the Final Djara B respectively. The burin found in a small rock niche above the terrace can probably be affiliated to the Epipalaeolithic, while some flaked flints may point to a Djara A or Djara B age. In the light of these dates, it is suggested that the cave was integrated into human activities as long as habitation took place in the surroundings of the cave.

(3) In looking for possible stylistic and thematic parallels among the rock art in the Western Desert, there is some reason to connect the Djara depictions with the complex of incised wild fauna in the Egyptian oases and the deserts beyond. This is currently the only parallel that appears from the corpus of known sites in the Western Desert. Although only a vague outline in absolute dating of the rock art, there is some consensus to affiliate the wild fauna – better known from Winkler’s chronological sequence as “Earliest Hunters” (1938: 33-35) – to the Holocene humid period or slightly later, possibly to the Bashendi B unit at Dakhla Oasis (McDonald 1990: 43-46, Krzyżaniak 1990). This approach appears to be plausible in the light of the contextual dating evidence from Djara.

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Bibliography

- BARICH, B.E., 1998. The Wadi el-Obeiyd Cave, Farafra Oasis: A new pictorial complex in the Libyan-Egyptian Sahara, *Libya Antiqua* (New Series) 4: 9-19.
- BUBENZER, O. & HILGERS, A., 2003. Luminescence dating of Holocene playa sediments of the Egyptian Plateau Western Desert, Egypt, *Quaternary Science Reviews* 22: 1077-1084.
- CLAËN, E., KINDERMANN, K., PASTOORS, A. & RIEMER, H., 2001. Djara 90/1 - Felsbildhöhle und Fundplatz eines holozänen Gunstraums der Nordost-Sahara (Ägypten), *Archäologisches Korrespondenzblatt* 31(3): 349-364.
- DARIUS, F. & NUSSBAUM, S., 2007. In search of the bloom – plants as witnesses to the humid past [in:] BUBENZER, O., BOLTEN, A. & DARIUS, F. (eds.), *Atlas of Cultural and Environmental Change in Arid Africa*, Africa Praehistorica 21, Köln: 78-81.
- GEHLEN, B., KINDERMANN, K., LINSTÄDTER, J. & RIEMER, H., 2002. The Holocene occupation of the eastern Sahara: Regional chronologies and supra-regional developments in four areas in the absolute desert [in:] JENNERSTRASSE 8 (ed.), *Tides of the Desert - Gezeiten der Wüste. Contributions to the Archaeology and Environmental History of Africa in Honour of Rudolph Kuper*, Africa Praehistorica 14, Köln: 85-116.
- HUYGE, D., 2003. Grandeur in confined spaces: Current Rock Art research in Egypt [in:] BAHN, P.G. & FOSSATI, A. (eds.), *Rock art studies. News of the world II. Developments in rock art research 1995-1999*, Oxford: 59-73.
- KINDERMANN, K., 2003. Djara: Prehistoric Links between the Desert and the Nile [in:] HAWASS, Z. & PINCH BROCK, L. (eds.), *Egyptology at the Dawn of the Twenty-first Century*, Proceedings of the Eighth International Congress of Egyptologists Cairo, 2000 (Vol. 1), Cairo: 272-279.
- KINDERMANN, K., 2004. Djara: Excavations and surveys of the 1998-2002 seasons, *Archéo-Nil* 14: 31-50.
- KINDERMANN, K., 2006. *Djara. Zur mittelholozänen Besiedlungsgeschichte zwischen Niltal und Oasen (Abu-Muhariq-Plateau, Ägypten)*. (Unpublished Ph.D. thesis Köln 2006).
- KINDERMANN, K. & BUBENZER, O., 2007. Djara – humans and their environment on the Egyptian limestone plateau around 8,000 years ago [in:] BUBENZER, O., BOLTEN, A. & DARIUS, F. (eds.), *Atlas of Cultural and Environmental Change in Arid Africa*, Africa Praehistorica 21, Köln: 26-29.
- KINDERMANN, K., BUBENZER, O., NUSSBAUM, S., RIEMER, H., DARIUS, F., PÖLLATH, N. & SMETTAN, U., 2006. Palaeoenvironment and Holocene land use of Djara, Western Desert of Egypt, *Quaternary Science Reviews* 25(13-14): 1619-1637.
- KRZYŻANIAK, L., 1990. Petroglyphs and the research on the development of the cultural attitude towards animals in the Dakhleh Oasis (Egypt), *Sahara* 3: 95-97.
- KUPER, R., 1996. Between the oases and the Nile. Djara: Rohlfs' Cave in the Western Desert [in:] KRZYŻANIAK, L., KROEPER, K. & KOBUSIEWICZ, M. (eds.), *Interregional Contacts in the Later Prehistory of Northeastern Africa*, Studies in African Archaeology 5, Poznan: 81-91.
- KUPER, R., 2002. Routes and Roots in Egypt's Western Desert: The Early Holocene Resettlement of the Eastern Sahara [in:] FRIEDMAN, R. (ed.), *Egypt and Nubia. Gifts of the Desert*, London: 1-12.
- KUPER, R. & KRÖPELIN, S., 2006. Climate-Controlled Holocene Occupation in the Sahara: Motor of Africa's Evolution, *Science* 11: 803-807.
- LE QUELLEC, J.L., FLERS, P. & FLERS, P., 2005. *Du Sahara au Nil. Peintures et gravures d'avant les pharaons*. Paris.
- LE QUELLEC, J.L. & HUYGE, D., 2008. Rock art research in Egypt, 2000-2004 [in:] BAHN, P.G., FRANKLIN, N. & STRECKER, M. (eds.), *Rock art studies - news of the world*. Volume 3 (pp. 89-96). Oxford.
- MCDONALD, M.M.A., 1990. The Dakhleh Oasis Project: Holocene Prehistory: Interim Report on the 1988 and 1989 seasons, *Journal of the Society for the Study of Egyptian Antiquities (JSSEA)* 20: 24-53.
- NEUMANN, K., 1989a. Zur Vegetationsgeschichte der Ostsahara im Holozän. Holzkohlen aus prähistorischen Fundstellen [in:] KUPER, R., (ed.), *Forschungen zur Umweltgeschichte der Ostsahara*, Africa Praehistorica 2, Köln: 13-181.
- NEUMANN, K., 1989b. Holocene vegetation of the Eastern Sahara: charcoals from prehistoric sites, *African Archaeological Review* 7: 97-116.

- PASTOORS, A., 2003. Höhlenkunst und Raum: Methodische Überlegungen zur Analyse von Konzepten der Höhlengestaltung auf der Grundlage der Höhle Djara (Ägypten) [in:] PASTOORS, A. & WENIGER, G.-C. (Hgs.), *Höhlenkunst und Raum: Archäologische und architektonische Perspektiven*. Wissenschaftliche Schriften des Neanderthal Museums 3, Düsseldorf: 47-64.
- RHOTERT, H., 1952. *Lybische Felsbilder. Ergebnisse der XI. und XII. Deutschen Inner-Afrikanischen Forschungs-Expedition (DIAFE) 1933/ 1934/ 1935*. Darmstadt.
- RIEMER, H., 2003. Abu Gerara: Mid-Holocene sites between Djara and Dakhla Oasis (Egypt) [in:] KRZYŻANIAK, L., KROEPER, K. & KOBUSIEWICZ, M. (eds.), *Cultural Markers in the Later Prehistory of Northeastern Africa and Recent Research* 8, Poznan: 73-93.
- RIEMER, H. & KINDERMANN, K., 2008. Contacts between the Oasis and the Nile: a résumé of the Abu Muhariq Plateau Survey 1995-2002 [in:] MIDANT-REYNES, B.; TRISTANT, J. (eds.), ROWLAND, J. & HENDRICKX, S. (ass.), *Egypt at its Origins 2*. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt", Toulouse (France), 5th-8th September 2005, *Orientalia Lovaniensia Analecta* 172, Leuven: 607-633.
- ROHLFS, G., 1875. *Drei Monate in der libyschen Wüste*. Cassel (Reprint *Africa Explorata* 1, Köln 1996).
- ROUZAUD, F., 1977. *Éléments pour la Paléospéléologie des Pyrénées centrales au paléolithique supérieur*. Mémoire pour l'obtention du diplôme de l'E.H.E.S.S. Toulouse. Ecole des hautes études en sciences sociales.
- ROUZAUD, F., 1997. La paléospéléologie. *Proceedings of the 12th International Congress of Speleology* 3: 49-52.
- WINKLER, M.A., 1938. *Rock-Drawings of Southern Upper Egypt I*. Sir Robert Mond Desert Expedition, Egypt Exploration Society/Humphrey Milford, London.
- WINKLER, M.A., 1939. *Rock-Drawings of Southern Upper Egypt II*. Sir Robert Mond Desert Expedition, Egypt Exploration Society/Humphrey Milford, London.
- WREDE, V., 1996. Fremde Welten unter unseren Füßen. Was sind Höhlen? [in:] ROSENDAHL, W. & KRAUSE, E.B. (eds.), *Im Reich der Dunkelheit: Höhlen und Höhlenforschung in Deutschland*, Gelsenkirchen: 10-14.